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1. many aspects of eukaryotes are similar to bacteria. Mitochonaria have their own circular DNA strands. Bacteria also have their own DNA although it is larger than that of mitochondria. Both mitochonaria and bacteria/prokaryotes have their own cell membranes as well. A third thing that these cells have in common with the cell organelles is their reproduction patterns. Both reproduce by splitting in ~~beeee~~ half & forming two new offspring. Based on this, mitochonaria are very similar to bacteria.

2. It is not known how the bacteria cells would have gotten inside of the eukaryotes. This process would have happened a long time ago so there is no evidence as to how it happened. However, based on what is known about symbiosis and eating patterns of bacteria, a hypothesis has been proposed. It is believed that one bacteria cell engulfed another but it did not digest the other bacteria since the 2nd bacteria lives inside of the first, they could both benefit from their predicament. Through reproduction, the cell reproduces with the other cell still inside of it which makes what is known today as eukaryotes.

→ other bacteria cells to form

excellent

3. In the mid to late 1900's Jeon Kwang made the discovery, after an epidemic involving X-bacteria invading amoeba, that in the amoeba that survived, the bacteria

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created a protein necessary for the remaining amoeba to survive. This suggests that the species changed so that the amoeba relied on the existence of the bacteria inside of them to survive. In the 1960's, Lynn marguis proposed the idea that one organism can live inside another so that they eventually become part of a single lineage. This would be called endosymbiosis. The first hypothesis evolved into the second (symbiosis → endosymbiosis).

4. The strongest aspect of the arguement is the concrete evidence used. The idea that bacteria and mitochondria are so closely related supports the idea that mitochondria were once separate bacteria within another cell. Also, the idea that chloroplasts are so similar to mitochondria helps support the idea even more. (refer to ideas stated in #1)

5. There are some things that do not necessarily make sense with this theory. The first thing to be skeptical about is how a free-living cell could become completely dependent & integrated parts of a new cell. How did two separate organisms depending on each other become one organism? A second question is how mitochondria became energy producing machines. Bacteria do produce energy in order to survive but how did they

what the theory is trying to account for

do it to power themselves & a whole other organism? How did their sole purpose become being the power-plant for another cell?

6. I do not believe that this is a complete theory. There is a good amount of concrete evidence that supports the idea but there are also a good amount of big questions associated with it. The questions are important and their answers are found ~~to~~ then they could potentially disprove the theory (refer to #5). This makes the theory, in my opinion, not strong enough to be complete.

7. Our group decided that the article should not be published in the magazine. There are too many kinks & weak parts in the idea. How bacteria became mitochondria is a big idea that is not explained. Without this explained, it is hard to know how true & complete the theory is. Based on this, we believe that it would be too risky to publish this idea as a complete theory before everything is explained